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Amendments to the Claims

- 1 40. (currently amended) A distributed computer network, comprising:
2 a collection of computers;
3 means for an added computer to locate the collection of computers;
4 means for the added computer to establish a connection to the collection of
5 computers;
6 means for each computer in the collection of computers, including the added
7 computer, to establish a logical arrangement such that each computer in the collection of
8 computers can act as a top level of a hierarchy, wherein the hierarchy includes at least a
9 majority ~~substantial number~~ of the computers in the collection of computers.
- 10 41. (previously presented) The distributed computer network of claim 40, wherein
11 the hierarchy comprises a set of member computers, a membership of which depends upon a
12 logical location of the computer that acts as the top level of the hierarchy.
- 13 42. (previously presented) The distributed computer network of claim 40, further
14 comprising means for the computer that acts as the top level of the hierarchy to initiate a
15 search for one of a specified computer and specified data.
- 16 43. (previously presented) The distributed computer network of claim 42, wherein
17 each computer in the collection of computers includes a searchable index of the contents of
18 the computer for facilitating said search.
- 19 44. (previously presented) The distributed computer network of claim 40, further
20 comprising means for the computer that acts as the top level of the hierarchy to broadcast
21 information throughout the hierarchy.

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22 45. (previously presented) The distributed computer network of claim 40, further
23 comprising means to control a bandwidth utilization of the collection of computers.

24 46. (previously presented) The distributed computer network of claim 40, further
25 comprising a plurality of lower level computers, wherein information regarding the lower
26 level computers is stored in a respective one of the computers in the collection of computers.

27 47. (previously presented) The distributed computer network of claim 40, further
28 comprising means for rebuilding a logical arrangement of the collection of computers
29 following a loss of at least one computer from the collection of computers.

30 48. (previously presented) The distributed computer network of claim 40, further
31 comprising means for distributing software updates throughout the collection of computers.

32 49. (previously presented) The distributed computer network of claim 40, wherein
33 each computer in the collection of computers includes a dynamic physical address.

34 50. (currently amended) The distributed computer network of claim 40, further
35 comprising means for generating the logical arrangement to ~~substantially~~ minimize a logical
36 distance between a logical center of the collection of computers and a logical collection edge.

37 51. (new) The distributed computer network of claim 40, wherein the means for
38 each computer in the collection of computers to establish a logical arrangement comprises
39 computer software implementing steps to self organize each computer among the collection
40 of computers.

41 52. (new) A distributed computer network comprising:
42 a collection of computers logically arranged such that a first computer of the
43 collection of computers is situated at a logical center of the collection of computers, wherein

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44a plurality of computers from the collection of computers form a logical arrangement

45comprising a series of concentric polygons around the first computer; and

46 wherein each computer in the collection of computers can act as a top computer in a

47hierarchy of computers, said hierarchy including at least a subset of the collection of

48computers by:

49 said top computer sending a message along each of at least one radial, each of said at

50least one radial comprising a line of logically adjacent computers in the collection of

51computers that logically extends radially from said top computer; and

52 at least one lower level computer, of the collection of computers, located on one of

53said radials further forwarding the message along an indirect radial, each indirect radial

54comprising a line of logically adjacent computers in the collection of computers that logically

55extends radially from said at least one lower level computer but does not logically intersect

56any of the at least one radial.

57 53. (new) The distributed computer network of claim 52, wherein each computer

58not located on an outermost edge of the collection of computers has the same number of

59radials extending therefrom as there are sides of the concentric polygons.

60 54. (new) The distributed computer network of claim 52, wherein each computer

61operates to:

62 move to a position closer to the logical center when said closer position is not

63occupied by another computer; and

64 move, either in a clockwise or a counterclockwise rotation relative to the logical

65center, to a position at the same level as a current position of the computer when the same

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66level position is not occupied by another computer.

67 55. (new) The distributed computer network of claim 54, wherein each computer
68further operates to prevent neighboring computers in the logical arrangement from moving to
69a different logical position during each of said moving to a closer location and moving to a
70same level position.

71 56. (new) The distributed computer network of claim 52, wherein each respective
72computer in the collection of computers stores information relating to each of a plurality of
73computers logically connected to and logically located around the respective computer.

74 57. (new) The distributed computer network of claim 56, wherein a top computer
75in said hierarchy in the collection of computers can initiate a search for content on the
76plurality of computers logically arranged in concentric polygons by sending said message.

77 58. (new) The distributed computer network of claim 52, wherein said message is
78selected from the group consisting of broadcast data, a search parameter, and update
79information.

80 59. (new) The distributed computer network of claim 52, wherein, other than the
81top computer, computers on a radial forward the message to at least two other computers and
82computers not on a radial forward the message to at least one other computer.

83 60. (new) The distributed computer network of claim 59, wherein each of the
84computers in the collection of computers is forwarded the message only once.

85 61. (new) A method for configuring a collection of computers in a distributed
86computer network in a logical arrangement, comprising:

87 selecting a computer to serve as a logical center of the collection of computers;

88 adding computers to the collection of computers to logically configure the computers

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89into a plurality of concentric polygons, wherein each added computer performs steps

90comprising:

91 finding a computer in the collection of computers;

92 following one of a radial and an indirect radial that includes the found computer to a

93collection edge, said radial comprising a series of logically adjacent radial computers that

94logically extend from the logical center, and said indirect radial comprising a series of

95logically adjacent computers that logically extend from one of the radial computers, wherein

96the collection edge comprises a logically outermost computer on said one of the radial or said

97one of the indirect radial; and

98 logically attaching to a computer in the collection of computers on the collection

99edge.

100 62. (new) The method of claim 61, further comprising the step of moving each

101added computer to a neighboring logical position that is logically closer to the logical center

102of the collection of computers if said closer neighboring logical position is not currently

103occupied by one of the computers in the collection of computers.

104 63. (new) The method of claim 62, further comprising the step of rotating each

105added computer to a neighboring logical position on the same logical level as the added

106computer if the same level neighboring logical position is not currently occupied by one of

107the computers in the collection of computers.

108 64. (new) The method of claim 63, wherein the step of rotating comprises either a

109clockwise or a counterclockwise motion relative to the logical center.

110 65. (new) The method of claim 63, further comprising the step of preventing

111other computers from moving into the closer neighboring logical position and from moving

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112 into the same level neighboring logical position during said steps of moving and rotating.

113 66. (new) A method for logically configuring a collection of computers in a

114 distributed computer network, comprising the steps:

115 selecting a computer to serve as a logical center of the collection of computers;

116 arranging computers from the collection of computers such that the collection of

117 computers are logically configured to form a plurality of concentric polygons around the

118 logical center;

119 adding a computer to the collection of computers;

120 logically connecting the added computer to a computer in the collection of computers,

121 located at a collection edge, wherein the collection edge comprises a logical outer edge of the

122 collection of computers and forms at least a partial concentric polygon around the plurality of

123 concentric polygons.

124 67. (new) A method of claim 66, further comprising the steps:

125 changing a logical location of the added computer to a next inner concentric polygon

126 if a computer in the collection of computers is not situated at a logical position that neighbors

127 the added computer at the next inner concentric polygon; and

128 changing a logical location of the added computer to a logically adjacent position on a

129 current concentric polygon of the added computer if a computer in the collection of

130 computers is not situated at said logically adjacent position.

131 68. (new) The method of claim 67, further comprising the step of sending a

132 message from a top computer of the collection of computers to each of a plurality of

133 neighboring radial computers, each neighboring radial computer forwarding the message to

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134another neighboring radial computer and to a neighboring indirect radial computer, such that

135the message is forwarded to each computer in the collection of computers only once.

136 69. (new) The method of claim 67, wherein the collection of computers compris-

137es one of a collection of caching computers and a collection of non-caching computers,

138wherein each caching computer stores information relating to a corresponding collection of

139caching computers.